SDMS 165967

California Department of Health Services

Perchlorate Findings:
- Los Angeles County
- Riverside County
- Sacramento County
- San Bernardino County
- Ventura County

Overview of California's Experience with Perchlorate in Drinking Water

Last Update: March 14, 2000

Background

In 1997 DHS sampled several hundred drinking water wells for perchlorate by DHS, beginning in February in northern California and in April elsewhere.

Perchlorate was first found in drinking water wells in eastern **Sacramento County** (up to 260 micrograms per liter, µg/L), near Aerojet General Corporation's facility. As a result of cleanup of contaminated shallow groundwater at Aerojet's chemical manufacturing and rocket testing facility near Rancho Cordova, water treated to remove volatile organic chemicals (for example, trichoroethylene, TCE) was reinjected into groundwater aquifers in the area. Perchlorate, also in the contaminated shallow groundwater, has been present in the reinjected water at concentrations up to 8,000 µg/L. Other aerospace sites in the area include one formerly owned by McDonnell-Douglas, and one formerly owned by Purity Oil Company.

Thereafter, using a **sensitive analytical method** developed by DHS' Santitation and Radiation Laboratory, DHS found perchlorate (up to 159 µg/L) in a number of drinking water wells in **Los Angeles County**, where several sites have been identified as potential sources of contamination, including an Aerojet facility (Azusa), the Whittaker-Bermite site (Santa Clarita), and the Jet Propulsion Laboratory (Pasadena).

Sampling also showed perchlorate at low levels (5 - 9 µg/L) in Colorado River water. The Colorado River's perchlorate is associated with contamination from ammonium perchlorate manufacturing facilities in Nevada.

DHS also found perchlorate in some **Riverside County** drinking water wells (up to 29 µg/L) and in some **San Bernardino County** drinking water wells (up to 325 µg/L) and in 24 agricultural wells (up to 221 µg/L). The perchlorate contamination is in a TCE plume associated with past operations of the Lockheed Propulsion Company.

Perchlorate was also found at 270 µg/L in an inactive well near a defunct fireworks site near Rialto.

DHS was advised of several other locations of ground water contamination by Regional Water Quality Control Boards:

- an explosives manufacturing facility near Lincoln, with perchlorate at 1,200 and 67,000 µg/L.
- United Technologies in Santa Clara, with perchlorate up to 180,000 µg/L.
- Whittaker Ordnance Facility near Hollister in San Benito County, with perchlorate up to 88 µg/L. An agricultural well in the vicinity contained perchlorate at 34 µg/L, and a private well, 810 µg/L.

Sampling Results

Subsequent to the initial DHS sampling, water systems began their own perchlorate monitoring using **commercial laboratories approved for the DHS method**. In 1999, DHS adopted a regulation that added perchlorate to the list of **unregulated chemicals for which monitoring is required** (Title 22, California Code of Regulations §64450).

The status of statewide monitoring is presented in Table 1; perchlorate findings have occurred in five counties (**Table 2**).

Table 1. Perchlorate sampling and detections in public water systems and sources (through March 9, 2000)

Sampling Status	Number (%)
Systems sampled	235 [b] of 4,681 [c] (5%)
Systems reporting detections [a]	42 of 235 (18%)
Sources sampled	1,451 of 11,837 [d] (12%)
Sources reporting detections	151 of 1,451 (10%)

[a] For purposes of this update, perchlorate is considered present in a drinking water source if it is detected at least twice. The detection limit for purposes of reporting (DLR)—the level at which DHS is confident about the quantification of the chemical's presence—is 5 µg/L. Data are required to be submitted to DHS if they are at or above the DLR. Some systems submit data below the DLR. (See **Laboratory Analysis** for the analytical method).

[b] The 235 systems collectively serve approximately 13.6 million people, or about 40% of the state's population. Of the sources in those 235 systems, 40% have been sampled.

[c] The 4,681 public water systems include 1,151 large systems, 2,312 small systems, and 1,218 non-transient non-community water (NTNC) systems (*e.g.*, schools, factories). Almost half (2,285) of the 4,681 public water systems, mostly small and NTNC systems, are regulated by local primacy agencies (LPAs), designations given to 34 of the state's 58 counties. An additional 3,859 public water systems are transient non-community (TNC) systems (*e.g.*, restaurants), which are not required to monitor for unregulated chemicals.

[d] The 11,837 sources consist of 10,972 ground water and 765 surface water sources. According to DHS' **Drinking Water Source Assessment and Protection Program**, (Table 9-1), California has 15,984 drinking water sources. The remaining 4,247 are TNC sources.

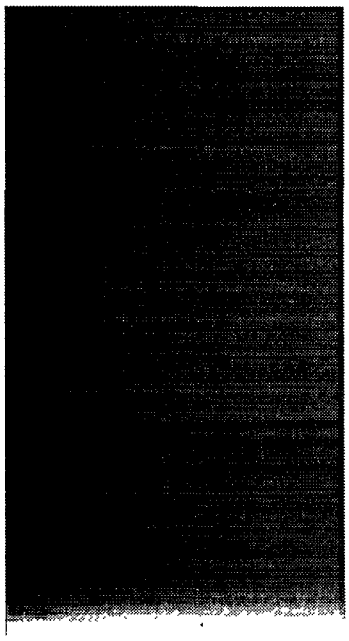

Table 2. Drinking water systems and sources with perchlorate detections.

County	No. of Systems	No. of Sources	No. of Sources with perchlorate > 18 µg/L
Los Angeles	28	87	20
Riverside	3	23	4
Sacramento	3	12	9
San Bernardino	7	27	10
Ventura	1	2	0
Total	**42**	**151**	**43**

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